palm-tree area, well irrigated with running water. Its population is somewhere near 150,000.

Within the city walls are its Souks, or Bazaars, which, while interesting, are dirty and evil-smelling. It is amongst its buildings of mosques, koutoubia, palaces and kasbas, that many vestiges of former Moghreb dynasties make the city so interesting to the traveller. But perhaps even more attractive are the strange diversities to be seen among its citizens.

On a fair day in the large square in the heart of the city, one may spend hours watching the motley crowd of strange peoples. Here are assembled the Arabs or Berbers of the country proper, the Touaregs of the Sahara, Moors of the sea coast, negroes from the Soudan or Timbuctoo, the Sous of the hills, Jews from all parts —relics of those driven out of Spain in the fifteenth century.

Here one gets a biblical movement of colour in the outfit and costumes of the crowd. Rubbing shoulder to shoulder you see the storyteller haranguing a crowd squatting on the ground, or a snake charmer attracting another group. Jugglers, wrestlers, some singing, some laughing, some playing in monotone rhythm on cymbals and tambourines. Each plying his stock-in-trade in some way or other and, in doing it, collecting the coppers from the crowd. Occasionally some European passes in a motor-car to complete the picture of strange contrasts.

G. P. Baker.

Occurrence of Manganese near Val d'Isère, Savoy.

I venture to think it will interest some readers of this Journal if I record a few of my observations on the occurrence of a mineral containing manganese, in the region of Val d'Isère.

Before commencing my narration, I wish to state that my attention has been called to a very exhaustive geological treatise, dated 1923, under the title (in English) of *Iron and Manganese in Switzerland*. A perusal of this work makes it clear that the ores of the metal manganese are to be found in some quantity, in five or six localities—in the Jura, in the region of Schaffhausen, and in two or three parts of East Switzerland. I have not, so far, come across any similar work, or article, dealing with the occurrence of this metal in other parts of the chain of the Alps. Without doubt other spots will be well known locally. In my own experience of periodic wandering during upwards of fifty years from the Ligurian Alps to the Dolomites, I have only once, before the find under consideration, come across this metal in any quantity. That was near the Mediterranean coast.

The story of my find is quickly told. In July 1929 I was at Tignes with two young friends. Towards the end of our stay I

remarked 'We have not visited the valley and route leading to the Col de la Rocheure; let us do so'—and we went. We reached the little gorge beyond the chalets of Le Manchet, at lunch time, and afterwards I wandered along the pathway leading to the pass named, and to the Chalet du Charvet, with my eyes open, as is my habit, to notice any mineral matter that might happen to be of interest. It was not long before I came upon some pieces of dense, heavy stone which, on fracture with my hammer, were black and amorphous on the fractured surfaces. From the streak caused by scratching, and the soiling of the fingers, I judged the mineral matter to contain manganese, and my interest was thus the more aroused. I collected a few of the pieces and also one large lump (which happens to weigh 1193 grammes), and brought them back to England for more careful examination.

The large lump has been accepted by the authorities of the Natural History Museum, London, and the mineral has been pronounced to be Wad, which is a manganese ore of varying composition, but in the main is a hydrated oxide of manganese, with silica, iron, and other impurities.

The large specimen referred to, shows signs of having come from a vein of some 4 inches in thickness, and it appeared to me to be of interest to revisit the region of the find, in order to try and discover the source of the specimens I had been so fortunate as to find.

Early in July 1930, my wife and I were privileged to find ourselves at Val d'Isère for a sojourn of about ten days. The result of my further wanderings, which I did not delay to commence, was very different from my surmises and expectations. My first little afternoon walk was over the mountain slopes beyond and above the hamlet of Le Joseray, at but a small distance from Val d'Isère. Here, on these grassy slopes, and at a distance of perhaps 4 or 5 kilometres from the spot of my previous year's find, I came across, to my surprise, three or four pieces of the same black, siliceous mineral—one specimen weighing no less than 1280 grammes. On another visit to the same vicinity, I found a lump which a little exceeds two kilos in weight. This latter, with other specimens referred to below, is now on show at the Hôtel des Glaciers at Val d'Isère.

Another more distant wander was to the Chalet du Charvet, and on, to the top of the steep slopes which rise above that chalet. Here, at the height of about 2600 m., I found not only several small pieces, but also some large blocks of rose-coloured siliceous rock and ore mixed, too large for me to lift, much less carry away.

Yet another, and fourth site where I came across further pieces, some quite large, of this same blend of ore and laminated siliceous rock, was in one of the storm-water courses, filled with stones and boulders, which are reached before the above-mentioned gorge. One specimen of ore from this spot, now at the Hôtel des Glaciers,

weighs 4 kilos ; another considerable specimen, which I managed on a subsequent occasion to carry back to the hotel from near the junction of the two great torrents beyond the gorge, weighs almost 10 kilos. At this last indicated spot there are one or two blocks of the same material far too large and heavy to lift, or even to move without levers.

With regard to the limits over which these scattered pieces of manganese ore and the associated siliceous rock are distributed, there are, naturally, many parts I have not visited ; but I may remark that I crossed the Col du Charvet by the path leading from Le Joseray, and thus made the complete circuit of the popular view-point of the Rocher du Charvet, without noticing any of the mineral until I reached the descent from the pass to the Chalet du Charvet. Subject to certain observations which follow, I have not discovered this manganese mineral in any other direction from Val d'Isère. Further, in no part where I found any manganese specimens was there any sign of their having come from the surrounding rock, whether it be calcareous or crystalline. Manifestly these scattered pieces of ore had all come from a rock now wholly disintegrated ; and doubtless from a higher level.

It was not until towards the end of my last visit to Val d'Isère that I recollected having found on the Col de la Leisse, the previous year, a certain black incrustation coating several of the granitic rocks of that pass. In some cases the black mineral permeates the rock in a succession of layers. Many who have visited the region will doubtless have noticed the material to which I am referring, for it forms a rather striking feature. I collected a few specimens with a view to examining them chemically, at leisure, on my return to England. I regret to state that when, a few days later, I found the specimens on the route to the Col de la Rocheure, I did not connect the two materials as having any relation the one to the other. The outward characteristics of the two are very different. The one from the Col de la Leisse, for the most part, is, as described, an incrustation with a smooth, almost polished surface. Further it occurs, *in situ*, on somewhat friable granitic rock. That is my recollection. The specimens found a few days later, on the route to the Col de la Rocheure, are just dust-covered pieces of stone on the path, and are not black until washed or fractured. They are massive and show no sign of having formed an incrustation. Further, such siliceous rock as that with which some of the pieces are associated is dense rose coloured, and homogeneous. I have to admit that later, when I had the opportunity of examining them chemically, the incrustation specimens had entirely escaped my mind.

Since my return to this country I have chemically examined some of my specimens, both fresh ones and old, and also the black incrustations from the Col de la Leisse. The latter proves to be rich in manganese, and in every chemical and physical respect it

conforms with the large and small samples found nearer to Val d'Isère.

As regards the geological origin of manganese, at the spots I have indicated, I am not in a position to make any pronouncement. It is my hope that other observers, fully conversant with such matters, and with more opportunity of making a closer and wider examination of the regions referred to, will consider it worth while to take up this quest, and in due season will make a considered and informing statement.

In case any reader of these observations should know of any publication (in particular, geological) connected with the subject of this note and region and will kindly communicate the reference to this JOURNAL, it is probable that others beside myself will be interested.

LEGH S. POWELL.

EXHIBITION OF PICTURES AT THE ALPINE CLUB, 1930.

MY first impression on going into the room was that of an exhibition well above the average, but of walls unnecessarily overcrowded with a superabundance of lightish cardboard. The Hon. Secretary told me that this was inevitable, as most of the exhibits were water-colours, for which white or cream coloured mounts are the most suitable. It would perhaps have been truer to say that as such mounts are fashionable, water-colours look their best in them; for artists are given to paint what looks best when dressed according to fashion. Swiss colour prints support this view; for though they lose market value when cut, the better ones are often improved by fairly close framing. Again, one of the best water-colours in the exhibition, showing the 'Head of Sulden Valley' (E. Harrison Compton), has no mount at all; and has been painted in a style which does not require one.

At the other extreme are Mr. Nelson McCleary's 'Morning Glow near Ax' and 'Pyrenees near Tarascon,' which are sufficiently good to stand on their own, without those relatively enormous mounts which look as if spaces have been left for next year's calendars to be pasted on below the pictures. I have had to translate Mr. McCleary's titles, because I absolutely decline to encourage such a mixture as 'Morning Glow près d'Ax.'

Impression number two, which applies to the club exhibitions in general, was that the pictures as a body formed far better representations of mountain scenery than do those one usually sees elsewhere. The reason is fairly obvious. If artists wish to become efficient painters of the human body, they take courses in anatomy. In the same way, if they desire to become efficient painters of hills, they should also take courses in anatomy; and is there any better